

Procedure for calculating AT&T's average residential price and other related statistics

1. Data sources
 - 1.1. PNR and Associates, *MarketShare Monitor*TM, Version 2.0 (April 23, 1999). This 200MB+ Access database contains demographic survey data and data from telephone bills for a sample of households in the contiguous U.S. It has data for approximately 2000 households per month for roughly January 1998 through January 1999.
 - 1.1.1. PNR's sampling process: administer survey to random sample of 20,000 households. About 40 percent of them agree to supply telephone bills in the future. Subsequently, random sample of 3,000 are asked each month to send bills. About 2,000 send bills that are complete and usable.
 - 1.1.2. Based on each household's income, size, and age, PNR calculates a set of weights that can be used to make the sample demographically representative of U.S. households. We use these weights in all calculations.
 - 1.2. Access charges and other fees: FCC *Trends in Telephone Service* gives data on the national average access charges for calls switched at both ends. It also gives data on the PICC for primary and additional residential lines. Various FCC Public Notices give the USF assessment percentages.
2. Select time period: Draw a sample of customers whose bills are dated August 1998 through January 1999. Thus, enable AT&T to have had time to deploy fully its carrier line charge and universal connectivity charge.
3. Identify AT&T's presubscribed customers: identify which customers AT&T assessed a carrier line charge or a calling-plan service charge.¹ Define these as AT&T presubscribed customers. Delete from the data set customers who had long-distance usage charges (according to the summary of the long-distance bill) but no detailed calling data.²
4. Identify AT&T basic-rate customers: Classify as a basic-rate customer any that satisfies all of the following conditions:
 - 4.1. None of the customer's calls was coded as being a calling-plan call.
 - 4.2. The customer paid no calling-plan service charge.
 - 4.3. The customer received no credit for free minutes.
 - 4.4. The customer had no other charges or credits.
5. Isolate AT&T interstate interLATA domestic direct-dial (IIDDD) charges and minutes for each customer. (*I.e.*, omit intrastate, intraLATA, non-direct-dial, and international charges and minutes for all carriers from the analysis.)
 - 5.1. Attribute AT&T carrier line charges and universal connectivity charges to IIDDD.³

¹ Two customers had calling-plan service charges but no carrier line charge. AT&T charges some customers a carrier line charge but not a universal connectivity charge.

² Seventeen customers have missing detailed calling data. Customers who had no detailed calling data and zero usage charges were not deleted.

³ Allocating any of the carrier line charge and universal connectivity charge to minutes other than IIDDD would have hidden part of AT&T's rate increases. This assumption neglects the fact that a small portion of the universal connectivity charge was caused by intrastate and international charges.

- 5.2. Compile IISDD minutes, IISDD usage charges, and intrastate DDD minutes.⁴ Also compile IISDD minutes in categories of weekday, evening, and weekend rate periods.
- 5.3. Allocate AT&T calling-plan service charges, credits for free minutes, and other charges and credits to intrastate DDD and IISDD in proportion to intrastate DDD and IISDD minutes.
6. Update AT&T prices to July 1, 1999:
 - 6.1. From the period of the dataset to the study period of July 1999, AT&T made five interstate price changes:⁵
 - 6.1.1. It decreased the rate for basic direct-dialed interstate weekday calls from \$0.28 to \$0.26 per minute.
 - 6.1.2. It decreased the rate for basic direct-dialed interstate weekend calls from \$0.13 to \$0.115 per minute.
 - 6.1.3. It increased the carrier line charge from \$0.85 per customer to \$1.51 per customer.
 - 6.1.4. It increased the universal connectivity charge from \$0.93 per customer to \$0.99 per customer.
 - 6.1.5. It applied a \$3.00-per-month minimum usage requirement to all basic-rate customers.⁶
 - 6.2. Reprice all basic-rate customer calls in the dataset to reflect the weekday and weekend rate reductions.
 - 6.3. Reprice all carrier line charges and universal connectivity charges to reflect those changes.
 - 6.4. Reprice basic-rate customers to reflect \$3.00 minimum usage requirement (“MUR”), counting all usage—whether direct-dial or not, intrastate, interstate, or international. Attribute the MUR surcharge to IISDD.⁷
 - 6.5. Sum all IISDD charges.
 - 6.6. Calculate IISDD average revenue per minute for all customers.⁸
 - 6.7. Calculate IISDD for basic-rate customers, with and without carrier line charge and universal connectivity charge.
7. Calculate IISDD average revenue per minute for basic-rate customers in 1991.
 - 7.1. Begin with July 1, 1999, IISDD average revenue per minute, excluding carrier line charge and universal connectivity charge.
 - 7.2. Dividing by each of the percentage increases in basic rates from 1991 through July 1, 1999, excluding carrier line charge and universal connectivity charge.

⁴ For any calls receiving discounts, calculate discounted price before compiling usage charges.

⁵ Not counting rate changes for

⁶ Except customers who identified themselves as Lifeline-eligible.

⁷ Allocating any of the MUR surcharges between IISDD and other calls would have hidden part of AT&T’s rate increase.

⁸ Any reference to “average” or “percentage” hereinafter implies calculation of the weighted average or weighted percentage, using household weights to make the sample representative of U.S. households.

8. Convert all per-minute figures from billing minutes to conversation minutes: assume conversation minutes = $0.9582 \times \text{billing minutes}$. (The 0.9562 figure comes from a calculation assuming any call whose conversation time is at least $X+0.1$ minutes and less than $X+1.1$ minutes is billed as X minutes. It also takes into account the average duration of residential IISDD minutes.)
9. Calculate access charges and other fees for AT&T residential customers:
 - 9.1. Calculate AT&T's per-minute access bill for IISDD usage in late 1991 (at \$0.0697 per conversation minute) and July 1, 1999 (at \$0.0282 per conversation minute): per-minute access charge rate per conversation minute times sample IISDD conversation minutes.
 - 9.2. Calculate AT&T's IISDD universal service fund bill in July 1, 1999: 3.93% of IISDD sample revenues.
 - 9.3. Deduce each customer's number of lines from the database's field showing the FCC's subscriber line charge. If a customer has no subscriber line charge, then assume the customer has one line.
 - 9.4. Calculate AT&T's carrier line charge on July 1, 1999: \$0.95 times the number of primary lines plus \$1.77 times the number of additional lines.
 - 9.5. Sum access charges and all fees for July 1, 1999, and divide by the number of sample conversation minutes.